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PSC Overview Series . . .

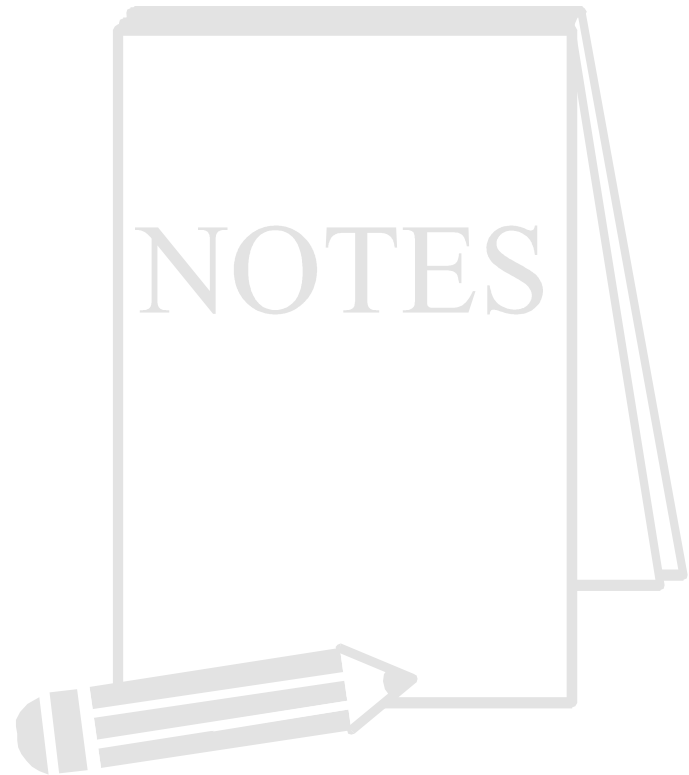
Common Power Plant Siting Criteria



Public Service Commission of Wisconsin

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This overview is intended to illustrate factors that are considered when a developer is determining where to locate a new power plant. Locating the plant is often termed “siting.”





Introduction

In 1993, the Public Service Commission (PSC or Commission)¹ convened a Power Plant Siting Collaborative (Siting Team) to develop criteria and methods for comparing possible power plant sites. The criteria that were developed represent the concerns of a broad range of interested parties, including utilities, independent power producers, regional planners, government agencies, intervenors, and members of the public.

Recent legislation has greatly reduced the PSC's role in power plant siting. However, the siting criteria are still useful for developers and are helpful in determining how appropriate a proposed site may seem to regulatory agencies and local citizens.

PSC Role in Power Plant Siting

The PSC is the state agency that is responsible for ensuring that electric service in Wisconsin is adequate and reliable, and is provided at a reasonable cost with minimal environmental impact.



For any new power plant over 100 megawatts (MW) in size, the developer must apply for a Certificate of Public Convenience and Necessity (CPCN) from the PSC. The PSC reviews the environmental and socioeconomic impacts of a proposed plant on the areas around proposed site alternatives. The PSC also examines the potential routes for new power lines, natural gas pipelines, or steam/water lines that the plant would require at each possible site. The PSC prepares an Environmental Impact Statement (EIS) and holds a public

¹ "The Commission" means the three Commissioners acting as a decision-making body. "PSC" means the agency as a whole.

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hearing in the project area. At the end of its review, the Commission issues an “order” that approves, rejects, or modifies the power plant and imposes various kinds of environmental mitigation measures.

Public utilities may need to apply to the PSC for a Certificate of Authority (CA) for a new power plant less than 100 MW in size, depending on project cost. An EIS and a hearing are not automatically required for a CA, but the PSC would still review the application.

The Wisconsin Department of Natural Resources (DNR) assists the PSC in its review of a proposed power plant if the plant requires DNR permits for air emissions or water discharge. The PSC and DNR obligations are described in Wis. Stat. ch. 196.

Siting Criteria

The Siting Team described in the Introduction considered power plant developers, government agencies, and the public when creating the criteria. The siting criteria are intended as a “common language” for power plant site characteristics. They do not create a “cookbook” for finding sites. Developers can use the criteria as a checklist for public and agency interests and as a guide for clear communication to area residents. Government agencies can use the criteria to review the developer’s choice of site and ensure the project meets regulatory requirements. The standardized criteria can increase the efficiency of agency review. Members of the public need criteria that make the siting process easier to understand in order to provide appropriate input about detailed local factors. The general public can use the siting criteria to:



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PSC Overview Series

The Public Service Commission has prepared other Overviews for important electric issues. These are:



- Air Quality Issues for Electric Power Generation
- Electric Energy Efficiency
- Electric Power Plants
- Electric Transmission Lines
- EMF—Electric & Magnetic Fields
- Environmental Impacts of Electric Transmission Lines
- Merchant Plants and Other Non-Utility Generation
- Nuclear Power Plant Decommissioning and Radioactive Waste Disposal
- Renewable Energy Resources
- Right-of-Way and Easements in Electric Facility Construction
- Underground Electric Transmission Lines

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- Compare sites.
- Understand why particular sites were chosen.
- Determine which factors of importance to them were considered.
- Influence siting or other project decisions.

Criteria Applied to Different Technologies

These criteria can be used for most fossil fuel power plant technologies. Wind plants, for instance, have a different set of criteria developed by Commission staff¹ with the help of other government agencies and private companies. Some criteria will not apply to some technologies. It is the responsibility of the power plant developer to explain any unique aspects or requirements of a particular technology.

Impact Mitigation

Mitigation measures to reduce impacts might affect the project outcome. Methods for impact mitigation should be considered throughout the siting and regulatory review processes.

Public Input

It's important that the general public have access to information about the siting process before an application is submitted to the PSC. People in the site areas have information that can be of value to a developer that could affect the choice of sites or the ultimate design or use of a site. A power plant developer might obtain public input by: soliciting input through a periodic newsletter; soliciting responses in personal letters sent to local governments, regional planners, and landowners; holding information meetings to solicit questions and

¹ "Commission staff" means all staff in the agency minus the Commissioners.

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comments or hand out questionnaires.

Criteria Categories

Table 1 shows the criteria grouped under six major categories chosen to organize all the data that appeared important to the public. The Siting Team recommended that these criteria be considered as the minimum criteria in a siting study.

Additional criteria may be useful, depending on project specifics. The criteria are discussed individually in this

Table 1 Siting criteria for electric power plants in Wisconsin, by major category

Site Requirements	<ul style="list-style-type: none">• Access• Air quality• Air space restrictions• Buffering• Floodplain• Fuel delivery• Need• Site adaptability• Site expandability• Site geography• Solid waste management• Transmission• Water discharge
Community Impacts	<ul style="list-style-type: none">• Aesthetics• Archeology-historic sites• Community service costs• Effects on wells• Labor availability• Number of relocations
Public Health & Safety Issues	<ul style="list-style-type: none">• Degradation of local air quality• Dust• EMF• Noise• Operational odors• Traffic safety

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Environmental Impacts	<ul style="list-style-type: none">• Air quality• Groundwater impacts - recharge, discharge, quantity, quality• Protected species• Stormwater runoff• Waste minimization, recycling, reuse• Wastewater treatment• Wetlands
Land Use Impacts	<ul style="list-style-type: none">• Industrial forests• Land acquisition• Land use compatibility• Previous land use• Prime agricultural land• Recreational land
Economic Impacts	<ul style="list-style-type: none">• Delivered costs of energy• Future development• Jobs and purchases• Local tax impact• Property values• Transmission and distribution changes

Overview.

Criteria Category - Site Requirements

Access

Power plant construction and operation can require road, rail, or barge access to the site. The number and location of site entrances and the distances to and quality of nearby roads and rail lines are important. Sites with access solely from heavily traveled roads are less desirable than sites on less heavily traveled routes. However, closeness to major highways is desirable. The objective is to allow easy access to the site without causing traffic congestion or safety problems.

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Air quality

Some areas don't meet the air quality standards set by current laws and regulations. These areas are called "non-attainment areas." It may be possible to locate a plant in a non-attainment area by replacing a current pollutant source. The resulting emissions level must be less than the existing level. Although local air quality and meteorological data are not available for all areas of the state, they can help assess the site's attainment status and air quality.

Prevention of Significant Deterioration (PSD) increments represent the amount of air quality that may be "consumed" by new emission sources without violating air quality standards. Generally, sites in attainment areas with ample PSD increments are more favorable than sites in attainment areas with limited PSD increments. Sites in non-attainment areas with good offset potentials should also be viable. Sites in non-attainment areas with little or no offset potential are least desirable.

Air space restrictions

Federal guidelines restrict the height of structures near airports. These regulations may cause difficulties for plant structures like towers or chimneys. It's important to verify that a site can comply with Federal Aviation Administration (FAA) and other airspace guidelines. Generally, sites at greater distances from airports and designated clear zones are desirable, as are sites offset from runway alignments. Developers must also consider possible restrictions on the location of power plant-related landfill sites near airports.



Buffering

The intent of buffering is to minimize the visual and noise effects of the plant by increasing the distance to neighbors

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Local tax impact

One of the economic impacts of a power plant is the local tax impact. A portion of the taxes paid by the plant to the state are distributed or paid to the local community, including the host municipality and the host county. On the other hand, services required by the plant may cause local taxes to increase. Generally, sites associated with no increases in local taxes for plant services may be more desirable. Also, sites where plant tax payments increase tax assistance or distributions to local communities may be more desirable.

Property values

A potential concern of local property owners is the effect of plant siting on nearby property values. Generally, sites that enhance property values or minimize the decrease in property values may be more desirable. However, local property value impacts are often very difficult to predict.

Transmission and distribution changes

A new power plant will require transmission and distribution changes to connect the plant to the electrical transmission system. The potential for impacts from those changes is also of interest to local communities and adjacent landowners. Economic impacts of transmission and distribution changes, such as land use and right-of-way restrictions, should be identified. Generally, more desirable sites have fewer restrictions and impacts associated with required transmission and distribution changes.

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recreation lands. They could be displaced by a new plant or damaged by noise or aesthetic impacts. Generally, sites that minimize impacts on recreational areas, and are near fewer and less heavily used recreational areas, are more desirable.

Criteria Category - Economic Impacts

Delivered cost of energy

Sometimes, the cost of siting and constructing a power plant is included in the electric rates charged to customers. If so, the cost should be evaluated to determine both the immediate and long-term effects on customer rates and the effect on competitiveness of business and industry. Generally, sites that provide a lower delivered cost of electrical power are more desirable.

Future development limitations

The construction of a plant at a particular site may create limitations on future development in the local area through its effect on land use or through its consumption of local PSD air increments, water resources, of water discharge capacity. Generally, sites that impose fewer limitations on future development may be more desirable.

Jobs and purchases

The economic impact of a plant includes the jobs and purchases associated with the construction and operation of a plant. A cogeneration project may also help to keep existing industry jobs in the community. Generally, sites that generate or preserve more jobs in the local area may be more desirable.

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through use of surrounding land that provides visual and sound barriers. "Buffer area" refers to land between the plant facilities and adjacent property owners, especially residential property owners. Needed information includes the acreage, distance, and type of land that acts as a buffer, both on the property owned by the plant developer and on adjacent property owned by others. The potential for changes in the status and condition of these lands should also be described. Generally, sites with more or better buffer areas may be more desirable.

Floodplains

It's important to reduce the potential for flood damage and plant shutdown. Designs typically locate critical equipment above the 100-year flood level. Non-critical portions of plant systems (e.g., roads and buffer zones) below the 100-year level can be raised, diked, or otherwise protected. Generally, sites completely out of the floodplain or sites with room to locate major plant equipment out of the floodplain are preferred over sites where major equipment would be located in the floodplain.

Fuel delivery

Information is needed on access and distance to: existing fuel transport systems, competing fuel transporters, and alternate fuel delivery systems. On-site space may be needed for fuel storage. Generally, sites with access to competing fuel transporters and alternate fuels are preferable to sites without this access.

Need for power

This factor identifies areas in the state where future power needs will be greater than current power plant or transmission capacities. This factor is of interest to electrical system planners because a power plant sited in such an area could

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reduce system inefficiencies and transmission line losses. Generally, sites where there is a local or regional need for generation capacity may be preferred.

Site adaptability

Technical, economic, and environmental developments may change the preferred type of fuel or technology for power plants. Information is needed about the proximity and ease of access to alternate fuel supplies and the ability of the site (in acreage and conditions) to support the installation of new technologies such as gasifiers that use coal or biomass. Generally, sites adaptable to new fuels or technologies may be preferred.

Site expandability

A site might be able to support more generating capacity than proposed. It's usually more economical and environmentally acceptable to add generating capacity at an existing site than to build at a new site. Information is needed on the potential for a site to support more capacity than initially proposed, including the number and size of potential, future generating units or other facilities. Often, an expandable site may be more desirable.

Site geography

Site geography can affect construction costs and environmental impacts. The features of most interest are the general site topography (ground slope), soil types and depths, and depth to groundwater. These factors affect the amount of earthwork required and plant design requirements such as foundation and piping installation. Generally, sites with relatively flat topography are preferred over rolling hills or steep grades. Soil types with good weight-bearing capacity are preferred over soils with poor engineering characteristics. Favorable sites also

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with power plants. Generally, sites that are more compatible with present and planned land uses are more desirable, as are those where the plant would comply with existing land use regulations.

Previous land use

Previous land use may have caused site contamination. It's important to consider the existence of site contamination and the costs of cleanup in the selection of power plant sites. Sites without environmental contamination are more desirable to the developer. Vacated industrial sites may present opportunities for siting power plants when these sites are not contaminated with hazardous materials or otherwise complicated by existing concerns. On the other hand, contaminated sites may provide a "win-win" situation if site clean up can be accomplished while still providing a cost-effective site opportunity.

Prime agricultural land

The U.S. Department of Agriculture classifies prime farmland as land that holds prime agricultural soils for crop production. These farmlands are considered a valuable resource. Site studies should address the presence of prime farmland on the site and the effects of plant construction and operation on this farmland. Other farmlands, although not classified as "prime," may also be important to consider during siting (e.g., highly productive irrigated lands or less productive fields that are necessary for local farms to survive). Generally, sites that use or negatively affect important agricultural land may be less desirable.

Recreational areas

Recreational areas are public or private lands of interest and value, including parks, hunting grounds, and designated

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There are potential operational impacts on wildlife and wildlife habitat besides effects from air and water quality changes due to the combustion process. They include impacts related to fuel such as coal dust runoff, impacts related to cooling such as fish caught in cooling water systems or the discharge of heated cooling water into streams or lakes, or other impacts such as bird mortality from striking structures or new power lines. Sensitive sites are those that support greater wildlife use (proximity to good habitat, migration routes, food resources, etc.). However, facilities can also be designed to enhance habitat by incorporating naturalized buffer areas or use of cooling water for fishponds. Generally, sites that minimize negative impacts on wildlife from power plant operations are preferred.



Criteria Category - Land Use Impacts

Industrial forests

Industrial forests are a valuable commodity. Site evaluation should address the forest resources of the site and nearby lands, and the effects of plant construction and operation on these resources. Generally, more desirable sites have fewer impacts on these resources.

Land acquisition

Each site will have unique land acquisition requirements and effects. Generally, sites that have lower land acquisition costs and require shorter acquisition times are more desirable.

Land use compatibility

Typically, active or vacant industrial lands may be more compatible and urban residential lands may be less compatible

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have adequate groundwater depths to support plant construction and avoid shallow water table problems.

Site size

This criterion is used to clarify the land requirements of the proposed plant. Power plant types and designs have a wide range of land requirements. For example, coal plants tend to need larger areas to support rail lines, coal piles, and landfills. Natural gas-fired power plants may only need area for the generation facilities and support equipment. Needed information includes the site size (acres), and the portion of the site (acres) that would be occupied by plant buildings and systems. Generally, sites with ample space may be preferred.

Solid waste management

The amount and type of wastes depend on the type of power plant and fuel used, but a plant may need a site to meet on-site landfill, off-site landfill, or other waste disposal requirements. If so, information is needed on the acreage, location, groundwater conditions, and soil types of potential on-site, or nearby off-site landfill or waste management areas. Generally, a preferred site may have suitable on-site conditions (or correctable inadequacies) to meet solid waste standards. Least-preferred sites may be those where suitable landfill conditions exist only off site with a long haul distance.

Transmission

Any new transmission line required to connect the power plant into the electrical transmission system can be a significant cost of plant siting and a major cause of community concern. Generally, shorter new power lines are preferred to longer new lines, and lower-voltage lines are preferred to higher-voltage

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lines. Upgrading or rebuilding existing lines is sometimes preferred to installing new lines. Transmission connections that increase system reliability and stability and decrease system losses are desirable.

Water discharge

Many power plant technologies discharge wastewater into rivers, lakes, or municipal treatment systems. Local water resources must be able to absorb additional water that is hot or acidic. Generally, sites with more discharge capacity available nearby with fewer competing uses and restrictions on it are more desirable. Sites with access to municipal treatment systems with adequate capacity may also be desirable. Sites where the receiving water has ample physical and chemical assimilative capacity may be more desirable, as may sites with no existing legal waste load allocation and no competing or complicating discharges.

Water supply

Many power plant technologies use water from lakes, rivers, municipal water utilities, or groundwater. Surface water is used for plant cooling and groundwater is used for plant processes. Generally, the presence of adequate and usable water resources at or near a site is preferred over sites with remote, inadequate, or low-quality water resources. Sites with no competing water uses are generally preferred to sites with many uses.

Criteria Category - Community Impacts

Aesthetics

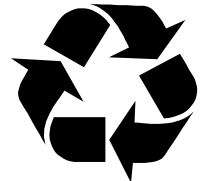
Aesthetic impacts are often of particular concern to the local community, where there is specific interest in clarifying the types and levels of visual impacts that may be associated with a proposed plant. Information of interest includes: the degree of

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that could use power generation waste products or power plant facilities that reduce wastes going to landfills by using the wastes as fuel.

Wastewater treatment discharge

The ability of waters to receive wastewater treatment discharges and absorb them varies. The waters must have the capacity to absorb chemical differences such as added biocides or differences in pH or physical differences in heat without adversely affecting aquatic life and ecology. Sites with nearby water resources that have a large ability to absorb water treatment discharge without adverse effects are desirable. Least desirable are those sites where water resources have little or no ability to absorb water treatment discharge without adverse affects.



Wetlands

Generally, sites with no wetlands or no potential for adverse wetland effects are desirable. Sites with minor wetlands or limited potential for wetland effects are more desirable than sites with larger areas of wetlands and more significant potential wetland effects. Sites with high quality wetlands or large functional wetlands are less desirable.

Wildlife and natural lands

Constructing a generation facility and auxiliary structures could have a direct effect on wildlife, habitat, and lands with good characteristics of natural ecological communities. Sites with little or no effect on wildlife and natural lands are more desirable than sites with more significant impacts on these natural resources.

Wildlife impacts from operation

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water levels and flows) and the quality of groundwater. Potential power plant effects include (1) the impact of water withdrawal on the groundwater supply and the quantity of groundwater available for other uses and (2) the extent of paving and other activities that reduce the percolation of water into the ground. Adverse effects on local aquifers that support wetlands, springs, and stream baseflow should be minimized. Sites with more limited groundwater resources on or near the site may be less desirable. The presence of groundwater-dependent resources on or near the site should also be considered.

Protected species

Protected species are state or federally listed rare, threatened, or endangered plant or animal species and their habitats, including special biological communities. In general, sites where no protected species are affected are more desirable than sites where protected species are located in off-site areas affected by operations or where protected species exist in the buffer area. Sites where protected species are located in the active site area are less desirable.

Stormwater runoff

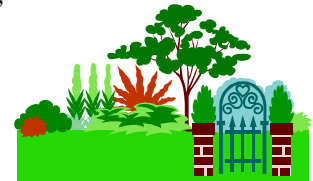
The site must be able to support construction and operation in a way that minimizes erosion, sedimentation, and transport of pollutants by stormwater runoff to waters of the state. Sites that pose problems for runoff management (highly erodible soils, steep slopes, etc.) are less desirable.

Waste minimization, recycling, or reuse

There might be site-specific opportunities to reduce the volume and strength of liquid or solid waste produced in generating electric power, and to recycle or reuse those waste products that are produced. These might include local industries or programs

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visibility of the plant and other facilities, the facilities' appearance from homes or scenic locations and overlooks such as wild and scenic rivers and state parks, the number of people who can see the plant, the amount of night sky disturbance from plant lighting or aircraft warning lights, and changes in visibility caused by plumes from stacks or cooling towers. Generally, sites that are well-hidden or limited in visibility may be more desirable than sites that are highly visible, produce night lighting effects, or have plume impact potential.



Archeological and historical sites

Society values artifacts and structures of archeological and historical significance. They are considered rare resources and listed with the State Historical Society of Wisconsin (SHSW). SHSW's records list the presence of known archeological sites, cemeteries, and historic buildings. The probability of finding artifacts, burials, or historic buildings is also important. So is the potential visibility of the plant from historic sites or in a historic view. Certain plant facilities might require relocation or redesign to avoid damaging a site or view. Generally, sites that have no such resources and little potential for finding them are more desirable than sites that have resources on the site property.

Costs to communities - services

Local communities should inquire about the services that a proposed plant may require, how the plant developer would pay for them, or what they would cost. Community services can include water supplies, water treatment, fire protection, security, and snow plowing. Indirect costs to the community may include new roads, sewer and water extensions, more school-age children to serve, or more use of library or other

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services. More desirable sites are those sites where indirect costs are minimal or where potential opportunities to strengthen community services exist. The need and projected costs for police, fire protection, water and sanitary sewer, and storm sewer services must be examined, in addition to other incidental needs such as road upgrades to handle increased traffic and heavier transportation weights.

Labor availability

A power plant requires labor for construction and operation. Local communities can benefit from these employment opportunities. Generally, sites that can make use of local labor are more desirable. These sites would have a larger skilled work force within a short distance from the plant site.

Number of relocations

The property owner impacts of a potential plant site are of significant concern for local communities. One concern is how many homeowners and businesses are located at the proposed site and would have to be moved if the plant were built. Generally, sites needing fewer relocations are more desirable.

Public attitude

The location of a power plant has many effects that are of interest to the local community. There are both advantages and disadvantages to be considered. Measures of local interest and concern include the current attitudes of local citizens and officials regarding a potential power plant in the local community, the local questions raised, the public input received, and public support or opposition to a particular site. Generally, a site where the public attitude is positive or supportive may be preferred.

Wells

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impacts on the non-human components of the environment such as vegetation, aquatic life, wildlife, building materials, etc.

Some pollutants may have long-term, cumulative impacts on vegetation and wildlife, or contribute to the deterioration of building materials such as limestone. Many toxic pollutants, such as heavy metals, adversely affect the health of wildlife and plants. The levels of these heavy metals build up in tissues, causing chronic toxic effects on health, reproduction, and other functions. Many of these are also passed on through the food chain, concentrating more in predatory animals such as eagles and walleye.

It is important to know about the presence of environmentally sensitive resources in the area affected by the power plants' emissions. The site sensitivity would depend also on: interactions among the types and concentrations of emissions; the ability of control technologies to significantly reduce these emissions; the modes of dispersion of these pollutants once they are in the environment; their persistence and bioaccumulation potential; and what is known about their adverse effects on fish, wildlife, plants and materials.

Sites with few sensitive natural resources elements (forest, acid-sensitive lakes, etc.) likely to be affected by air pollutant emissions are also more desirable. It would be particularly desirable for a site to be remote from Class 1 PSD areas, such as wilderness areas in national forests and large national parks or other resources whose use and enjoyment could be adversely affected by air pollution.

Groundwater impacts - recharge, discharge, quantity, and quality

Groundwater impacts include the effects of a power plant and related facilities upon groundwater hydrology (underground

Operational odors

Odor is a particular concern to nearby residents. There is public interest in understanding the cause and strength of any odors and knowing the distance these odors may travel beyond the plant site boundary. Power plant sites that have nonexistent or weak odors with a short distance of movement are more desirable than sites with objectionable odors that move beyond the site boundaries.

Traffic safety

There are normally two categories of traffic safety concern. One is the increase in local traffic, with a particular interest in truck and rail traffic. The other is the potential for cooling tower drift to cause fogging or icing of roadways adjacent to a plant. In general, sites with little potential for causing traffic increases or congestion and little or no potential for impact by cooling tower drift may be more desirable.

Wastewater treatment

Each site should be evaluated for the ability to meet wastewater treatment and discharge laws and regulations. In general, sites that have minimal toxic wastewater characteristics and provide ample treatment and assimilative capacity are more desirable because of the ability of the local receiving water to absorb discharges from plant water treatment systems.

Criteria Category - Environmental Impacts**Air quality**

This criterion is used to evaluate the potential for adverse

The use of water by a power plant has the potential to affect the local water supply and the surrounding environment. To meet water supply requirements, power plants may use groundwater wells, the local municipal supply, or both. This use may place a heavy load on the local system, lowering water yields from nearby wells. It may also not affect the system or nearby wells, or it may enhance the local system. Generally, sites where plant water use will have limited water supply effects or those that support upgrades of local systems are more desirable over sites where plant water use will have an adverse impact on the local water supply.

Criteria Category - Public Health and Safety Concerns**Degradation of local air quality**

Potential air-related health and safety concerns are measured three ways: attainment status, PSD, and information on sensitive populations. Attainment status evaluates compliance with air quality standards. PSD evaluates the use of air resources in areas that meet attainment. Information on sensitive populations provides an understanding of where people who may be sensitive to changes in air quality are located in relation to the plant site. Generally, the more desirable sites are in attainment areas with an ample PSD increment to maintain air quality and allow other growth, and they have few sensitive populations that are likely to be affected.

Attainment status. Public exposure to air emissions is regulated through the National Ambient Air Quality Standards (NAAQS) for major air pollutants including sulfur dioxide, oxides of nitrogen, carbon monoxide, ozone, particulates, and toxic elements such as lead, arsenic, and beryllium. A site evaluation should identify any NAAQS for which pollutant

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concentration in the site area is above attainment levels. For areas not in attainment, the evaluation should identify the State Implementation Plan required to bring this area back into attainment and any emissions available as either netting or offset credits.

Prevention of significant deterioration. For areas where all NAAQS regulations are met, the developer must consider the amounts of “clean air” which can be used (“consumed”). This use of the existing clean air is regulated by the PSD regulations. The site evaluation should include how much of the PSD increment is available and what quantity of pollutants can be emitted without using up the available increment below NAAQS levels.

A power plant site that can support cogeneration has the potential to be more energy efficient by combining electricity and steam generation. When a new power plant is located next to an industry that uses steam in its process, the power plant can serve as a new or improved steam supply to that industry. This may allow that industry to become more energy efficient and reduce air emissions by shutting down an existing (older) system that is less energy efficient and has a higher level of air emissions. Generally, sites with cogeneration potential are more desirable.

Sensitive populations. The purpose of power plant pollution regulations and emissions limits is to avoid harm to public health and the environment. The concern is elevated for nearby populations of elderly, sick, and very young people, who may have an increased sensitivity to plant-related emissions. Nearby facilities such as hospitals, nursing homes, day care centers, and grade schools may have populations with increased sensitivities.

Dust

COMMON POWER PLANT SITING CRITERIA

The “nuisance” impacts of fugitive dust are of particular concern to nearby residents. There is public interest in understanding the sources, types, and levels of fugitive dust that may be associated with a proposed plant, and the distance of dust sources from sensitive locations such as nearby residences. Generally, more desirable sites are those with fewer sources of fugitive dust and greater distances to adjacent residences and sensitive locations.

Electric and magnetic fields (EMF)

Public concern about potential health effects associated with exposure to magnetic fields has focused attention on electric facilities. Although scientific uncertainty persists, public concerns should be considered in siting facilities. Information of interest includes how magnetic fields near the power plant and associated lines will change. Generally, more desirable sites are those with no increases in EMF on existing lines (decreases are more desirable). Sites that require new lines may be more desirable if fewer people are exposed to the EMF produced by the line. Transmission line routes that minimize the number of residences, schools, etc., within the area of influence may be more desirable.

Noise

Noise is of particular concern to nearby residents. Information of interest includes noise caused by plant construction and operations, distance of noise sources from sensitive locations such as parks and residences, and applicability of local noise ordinances or other thresholds. Generally, more desirable sites maximize the distance between the noise source and the public, have landscape features that would absorb noise between the plant and the public, and have no receptors within any areas where noise guidelines or ordinances are exceeded. It is preferred that no sudden, loud, or unpleasant noise characteristics be perceptible to most people in the area.